

PHOENICIAN MAKES GOOD IN THE NAVY

That a young man can keep clean in the navy and do well has been proved by the experience of Justin B. Pinkerton, son of J. P. Pinkerton of this city. At the age of 19, 25 years ago, Mr. Pinkerton enlisted in the navy and has served continuously since. His father

says of him, "the fact may be emphasized that a young man can serve his country in the army or the navy and not bring a blush to the cheek of his mother."

Besides that, he can save money. In 25 years Mr. Pinkerton has saved



Justin B. Pinkerton

\$10,000; he has invested in Liberty bonds and Thrift stamps to the amount of \$1,400 and he has acquired a ranch of 20 acres lying between Seventh and Center streets.

On the occasion of one of his visits to Phoenix, The Republican story said of him:

"He is built like a switch engine. He still retains that appearance of robustness. The first exciting experience of Mr. Pinkerton after joining the navy was one morning at Manila bay when a man since well known to fame as Dewey was present. He afterward served in Cuban and Porto Rican waters.

"The first service of Mr. Pinkerton was on the old Monocacy; next on Admiral Dewey's flagship, the Olympia, and after that the South Dakota and the Maryland. More lately he was with the St. Louis on one of the trips to France as a convoy. He is now aboard the U. S. S. Iowa at Norfolk, Va.

He is the possessor of four medals, one a service medal, one a Spanish war medal and two of them for his service on battleships.

DEPUTIES BUSY—The sheriff's force was lessened by three yesterday when Sheriff Wilky took five young boys to the Industrial school at Port Grant and Deputies Warren and Driscoll turned J. C. Winder over to the prison authorities at Florence. Winder should serve a robbery term of from four to five years.

When you feel "all gin out" that is a sign that you should go to The Original Physical Culture System, 137 N. Central and get a Turkish Bath and Massage—it will put new life in you and make you feel ten years younger.—Adv.

Only 60c per dozen

See us today and be photographed.

ELECTRIC STUDIO
37 West Adams

FOR DRUNKENNESS
AND ALL DRUG ADDICTIONS.
No sickness, no publicity. Ladies treated as privately as in their own homes. Send for free booklet.
THE KELLEY INSTITUTE
2400 W. Pine St.
Los Angeles

AGENTS FOR
Fairbanks, Morse & Co.
Type "Z" Farm Engines
WINDMILLS AND PUMPS
Come in and See Us
FOR PRICES
J. H. Mulrein Plumbing Supply Co.
Phoenix, Arizona.

SERVICE FOR YOU And NEVER A DOUBT

There is never a doubt as to satisfactory trading results at this complete Drug Store. Never a doubt as to first reliable quality. Never a doubt as to getting the exact article you ask for.

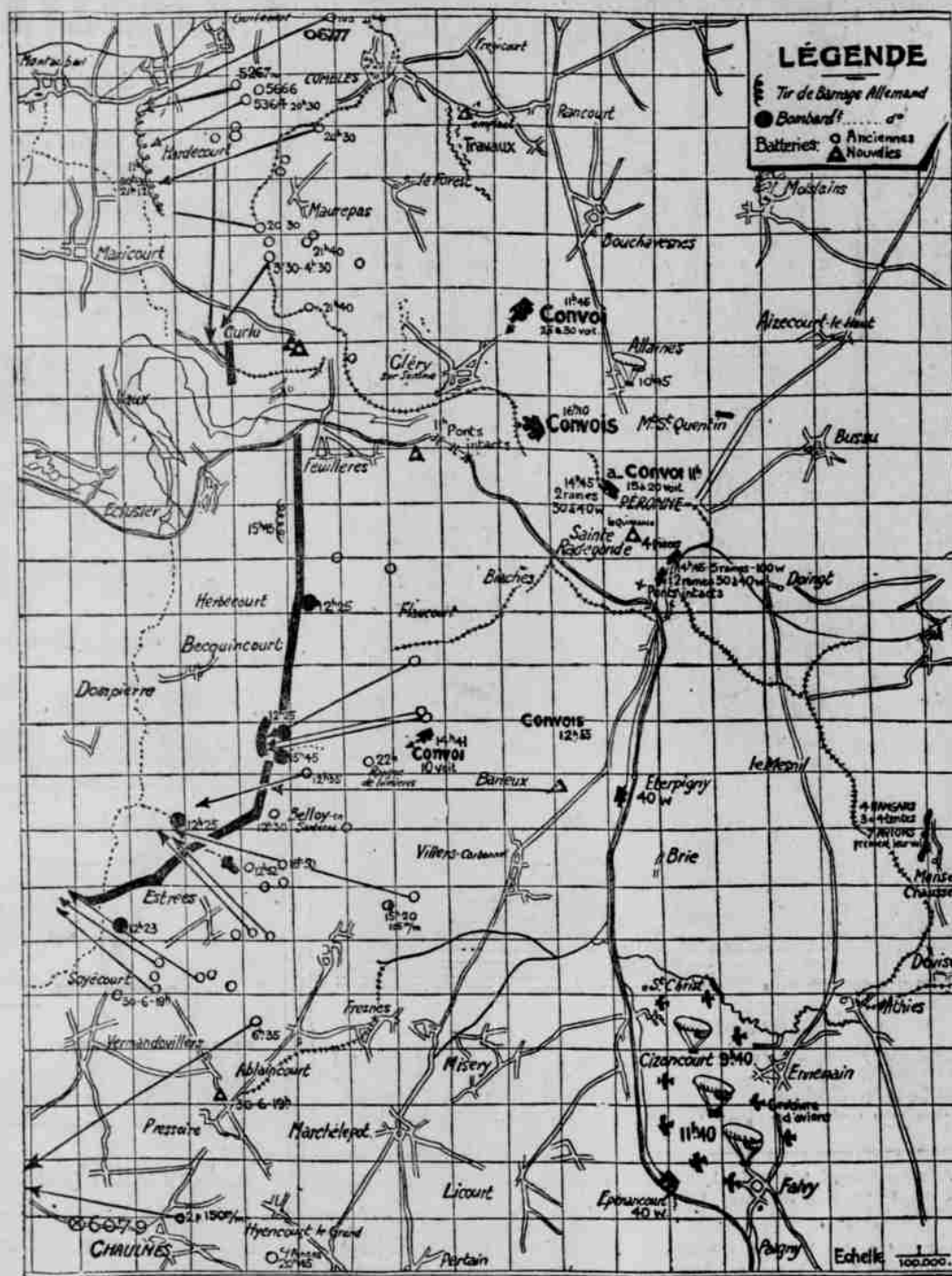
Never a doubt as to prompt courteous attention. Never a doubt about getting your money back if for any reason you are dissatisfied with your purchase.

THIS IS REAL SERVICE

Central Pharmacy

Roy Wayland, Mgr.
Goodrich Block
Phones: 1304-3091

Photography of the Air and the Capture of Peronne



By an Officer in the Signal Corps
Above is shown for the first time one of the "interpreted" photographs reproductions made by French aviators of part of the German front in France before the victorious assault on Peronne. It is an actual picture of a front about 12 miles long by 8 miles deep, upon which the general staff actually based its preparations against the Germans.

This shows, as nothing else can show, the vital importance of aerial photography in war. Every battery, new or old, active or silent, is indicated; every convoy and train, with its direction, number of cars, and hour of passing; every balloon or plane; every bombardment or barrage. Nothing is secret from the eye above. A few minutes' study of this map, just as it has come from France will reveal the new strategy of modern warfare and the fundamental revolution effected in it by the airplane. The picture might have been worked over to make it clearer, but it was thought best to leave it as used abroad.

Let us begin with the heavy black lines in the left center. These are, of course, the German trenches. The arrows crossing them indicate the firing of artillery in the direction shown. Where the arrow originates in a circle it means that an old battery, located and known in the work where the arrow originates in a triangle it means that a newly placed battery is busy. Many signs without arrows will be noticed, but as they do not have arrows pointing from them, they are not active. Often the number and size of guns is given, and the hour at which they are accustomed to operate.

Many "convoy" or convoys will also be noted with an arrow pointing in the direction of their travel, and the number of "volunteers" or carriages, as well as the hour of passing at that particular place. Similarly on the railroads, trains with so many "cars" or cars will be seen. In the right-hand lower corner are three balloons protected by nine airplanes. A little farther up, almost on the margin is an airplane with "4" hangars, 3 or 4 tents, and 7 aviators.

In the opposite upper left-hand corner is a curious wavelike line which shows that the German barrage fire is being laid low at this point. Half way down the picture is another such line.

At any moment that the French wish to attack it is obvious that they have full information before them, the location and size of the German bat-

teries, convoys, trains, airplanes, bar-rages, etc. A map such as this, of course would be used only by the higher staff for a large movement. For a local movement each local commander would have maps on a very much more detailed scale, to indicate what actually faced him, including every machine gun or strip of barbed wire.

This large map, covering about 8 by 12 miles is divided into sections, each a kilometer or half a mile square. Over 100 different photographs, all brought to the same scale and placed together into a large composite picture, are necessary for this result. Hour after hour photographers are bringing in new plates, which are developed, printed, and fitted into the proper places and "interpreted" to show any new German activities. In a picture of a large sector, such as this, many details which appear on the more detailed maps have been purposely omitted to avoid confusion for the staff.

The moment anything suspicious is noted, plane after plane goes out over the lines until at last a correct photograph is secured. If the Germans are quietly concentrating at a given spot, if they are placing new batteries, or if they are inaugurating a sustained fire over a wide front, the infallible eye above will give warning.

Surprise is therefore eliminated from modern warfare. The army which controls the air knows exactly what its enemy is doing, and if its control is absolute, its enemy can know very little about what is being done by it. The German poison gases and the British tanks alone in all these months of trench warfare have broken this rule.

The United States is now bending every energy to develop the extraordinarily intricate organization necessary to carry out this work. Lens and camera manufacturers are being driven at the greatest speed to supply the very delicate mechanisms necessary. So far, however, the service has been hampered by a lack of lenses in sufficient numbers, despite the true remarkable response of the public to appeals for individual lenses.

Perhaps an even greater difficulty is being experienced in the question of personnel to man this force. It requires photographers on a scale wholly unprecedented in previous American experience and map readers and interpreters who might be said to be almost nonexistent.

Recently the whole machinery for primary instruction in this work was concentrated at Rochester, N. Y., in a great new school with a capacity of 1,000 men a month. Successful graduates here are at once sent on for advanced training, many of them to become photographic intelligence officers, with opportunities for flights.

The great bulk of the men needed, however, are men familiar with photographic development, printing, enlarging, and panchromatic work, who can take a plate from the airman and within 10 minutes hand it over as a finished print to the staff officers. These men must learn an entirely new and infinitely more advanced science of photography than ever before practiced. They will have to work in France with the utmost exactness and under high pressure, usually in motor lorries just behind the front, sometimes in cellars near the advancing line.

Another hardly less vital force will be entrusted with keeping all this mechanism up to 100 per cent efficiency—camera and lens construction and repair men, cabinetmakers, instrument makers, etc. Many times cameras are injured in flight, even to being pierced by bullets, and it is obvious that the most skilled workmanship is necessary, not only to repair them but to keep them in perfect working order. A good camera at

the front is so valuable that no pains can be too great.

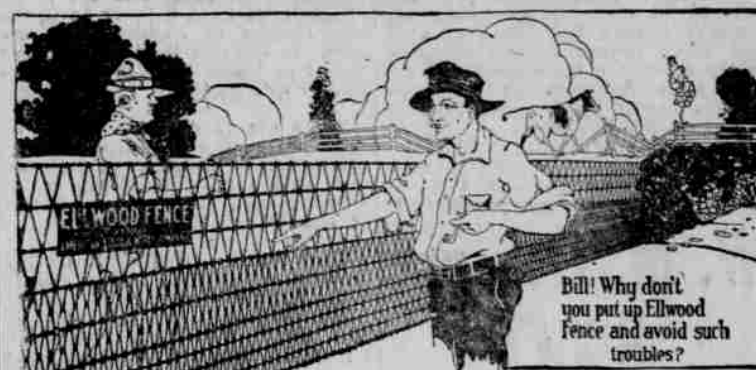
The third and probably the scarcest type of men are those who will be entrusted with fitting these photographs together and "interpreting" them. First, the various photographs must be laid alongside each other as an exact composite photographic of the whole German front below. This, of course requires skill and judgment and knowledge of topography and draftsmanship. Any error would be disastrous.

The actual work of "interpreting" the photographs—that is, of ferreting out from them the information which the Germans have used every precaution to conceal—requires a keenness of observation and a power of deduction that is equalled only in the finest detective work. For instance, the Germans had been bombarding Dunkirk from a distance of nearly 20 miles for several months without the French being able to locate the

(Continued on Page Fourteen)

Don't save mechanically. Get into the spirit of the game.—Hoover:

ELLWOOD FENCE



Ellwood Fence is Absolute Protection

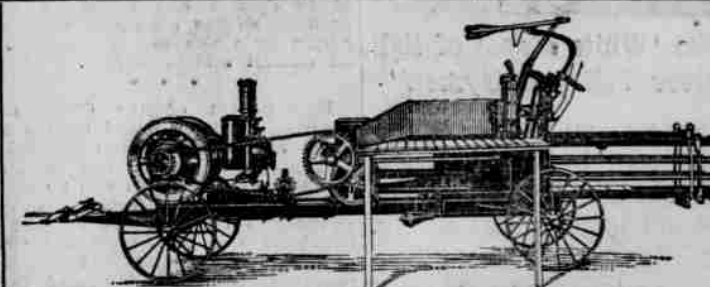
Its diamond weave presents a close and sure obstruction to animals, large and small. It presents the best appearance on lawn or farm. Full size wire. Full weight. Full length of rolls. Look for the sign: Ellwood Fence.

We now have a large stock of this fence and are in a position to fill orders promptly.



'AT THE SIGN OF THE DOG'

BUY LIBERTY BONDS—LIBERTY BONDS—BUY LIBERTY BONDS



AN INTERNATIONAL MOTOR PRESS

will bale your hay without any fringe on the bales.
—It's a Pleasure to Show You.

The O. S. STAPLEY CO., Inc.
Phoenix Five Points Mesa

BUY LIBERTY BONDS—LIBERTY BONDS—BUY LIBERTY BONDS



SECURE certainty of service in Tested Tires. They give service because it is proven service. Their endurance and mileage have been proved in the one way to assure mileage to the motorist, on the car on the road.

Hearken to that 1918 message, the roads of America send American motorists. Last year Goodrich, launching six Test Car Fleets in six widely different regions of our country, took Goodrich Tires, and with light and heavy cars mauled them over sand, gravel and rock roads of plains, deserts and mountains, to try out—

**GOODRICH
TESTED TIRES**

What those tires endured doubled Goodrich's pride in its tires. They fought America's roads through 4,173,744 tire miles. They conquered the roads of America in that phenomenal mileage, those BLACK SAFETY TREADS and SILVERTOWN CORDS.

Let American motorists listen to this message from America's roads. It means time and money saved them. They get lasting service with the tires that have won the title, "America's Tested Tires."

THE D. F. GOODRICH RUBBER COMPANY

W.S.S.
Every War Saving Stamp is a step towards Peace.
For sale at every Goodrich branch and dealer.

THE CITY OF GOODRICH - AKRON, OHIO.

Dr. H. T. DOAK
VETERINARY SURGEON
725 Grand Ave. Phone 1063
Cowboy Corral



Treats all diseases of the domestic animals according to the latest and most scientific methods. Surgery and dentistry a specialty. Complete and up-to-date equipment.
Dog and Cat Hospital Dogs Boarded
Equine Operating Table

Away with DEADLY POISONS
RAT CORN
KILLS RATS, MICE AND GOPHERS
FOR SALE BY
Arizona Seed and Floral Co.
Wholesale Distributors